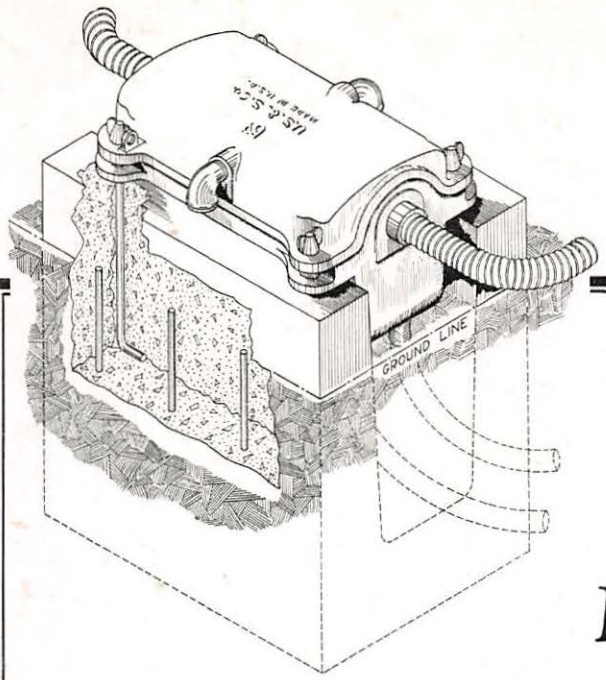


Improved

Line of "Union"

TERMINAL and JUNCTION BOXES

U. D. 215

Union Switch & Signal Co.

Swissvale, Pa.

Union Switch & Signal Co.
SWISSVALE, PA.
R786

Subject: Improved Line of "Union" Junction and Terminal Boxes

Union Development

Number 215

Date Sept. 3, 1935

6 Sheets

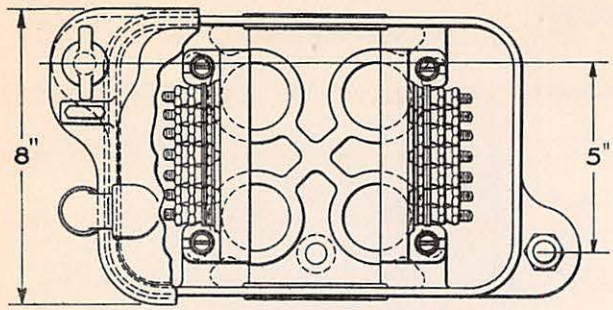
There is scarcely an installation of Railway Signaling that does not require Junction and Terminal Boxes; yet very little printed information covering the special features of this class of material is available. During the past few years, unusual climatic conditions at some locations and modern installation methods have brought about refinements in the design of Junction and Terminal Boxes, the details of which may be of general interest.

Style "W" Type of Box

One improved line of "Union" boxes (called Style W) resembles those found in Catalog Plates L-1250, L-1255 and L-1275; but differs in base construction, in order to overcome peculiar cases of accumulation of moisture due to condensation. This type of box is available in 14, 22 and 44-way capacities as shown in Fig.1.

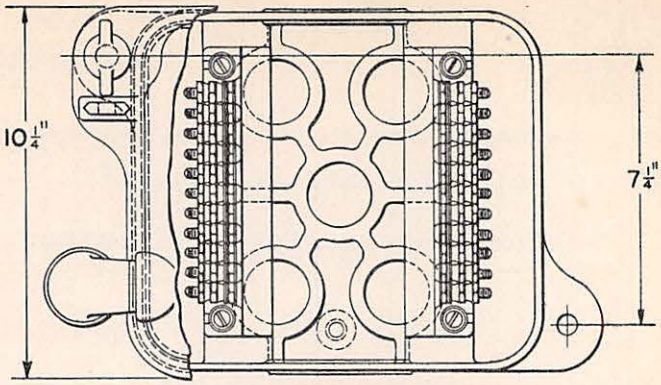
Condensation Prevention:

This condition is cared for in the Style "W" line of boxes by sealing the cables (usually Parkway) in the lower chamber and making provision, through the use of a U-shaped concrete foundation, for the bottom of the box to be exposed above the ground level. This construction greatly reduces the difference in temperature between the top and bottom of the box and any consequent tendency to



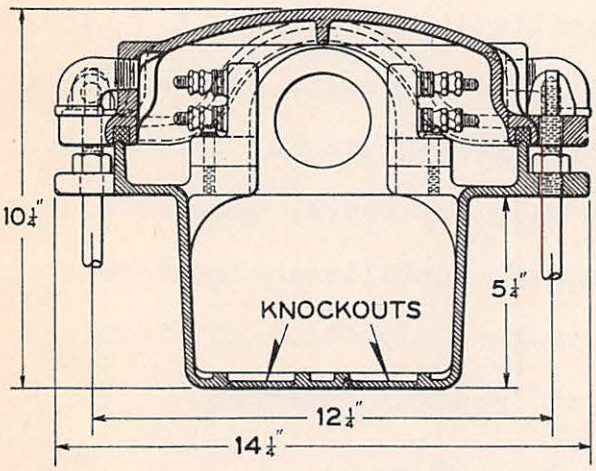
14-WAY BOX

A

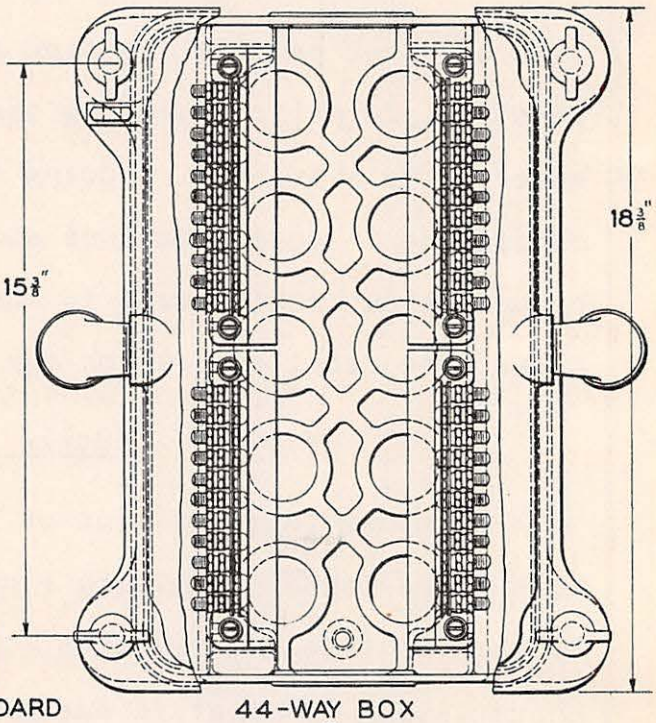


22-WAY BOX

B

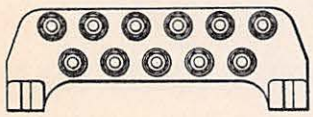


SECTIONAL END VIEW, THE SAME FOR 14, 22 AND 44-WAY BOXES.

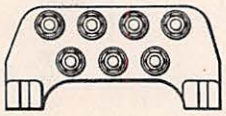


44-WAY BOX

C

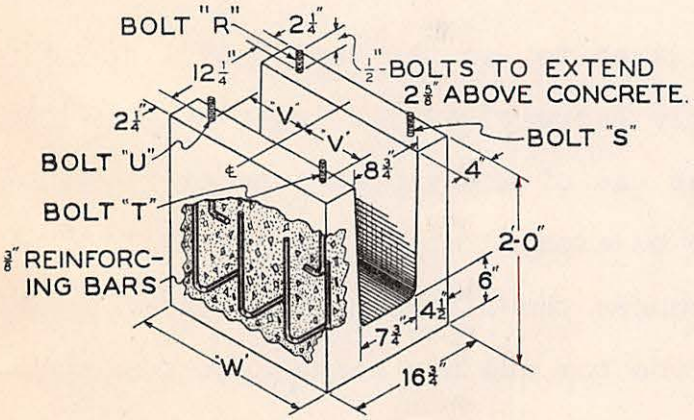


11-WAY TERMINAL BOARD



7-WAY TERMINAL BOARD

FOR WIRE OUTLET FITTINGS SEE PLATE L-1250



FOUNDATION LAYOUT			
JUNCTION BOX	BOLTS USED	"V" DIM.	"W" DIM.
14 WAY	"S"&"U"	2½"	9½"
22 WAY	"S"&"U"	3⅝"	11¾"
44 WAY	"R,S,T" &"U"	7 11/16"	21¾"

Fig. 1.....Style "W" Junction and Terminal Boxes.

cause condensation. Two elbow type ventilators equipped with fine mesh screens are used to equalize the temperatures inside and outside each box. The cover joints are effectively sealed with packing and as the cover bolts are located outside the box, the possibility of rain entering the box is eliminated.

Terminals and Fittings:

Terminals of the A.A.R. type are mounted in boards of moulded insulation, two sizes (7 and 11-way), being available. The 7-way units are used in the 14-way box and the 22 and 44-way boxes may be equipped in full or in part with 11-way terminal boards. The boxes have 2-1/2" cored holes at each end for 2" conduit or bushing and plug fittings. Thru the use of pipe reducing bushings, connections for 1-1/2" and 3/4" pipe or conduit are made available. For detail listing of fittings see catalog Plate L-1250.

Installation Advantages:

The Style "W" type of boxes are designed with a large compartment for pot-heading the cables and for slack in wires. Knockouts are cast in the bottom and only the number required for the cables being run need be opened.

After the cables are run into the box, marlin or tape should be wrapped around them at the point they enter the box and the lower chamber should be filled to a level of approximately one inch with an approved sealing compound.

The design of concrete foundations provides for ample strength with a minimum mass. Foundations may be set in place before or after the cables are run, as with their design, the cables are

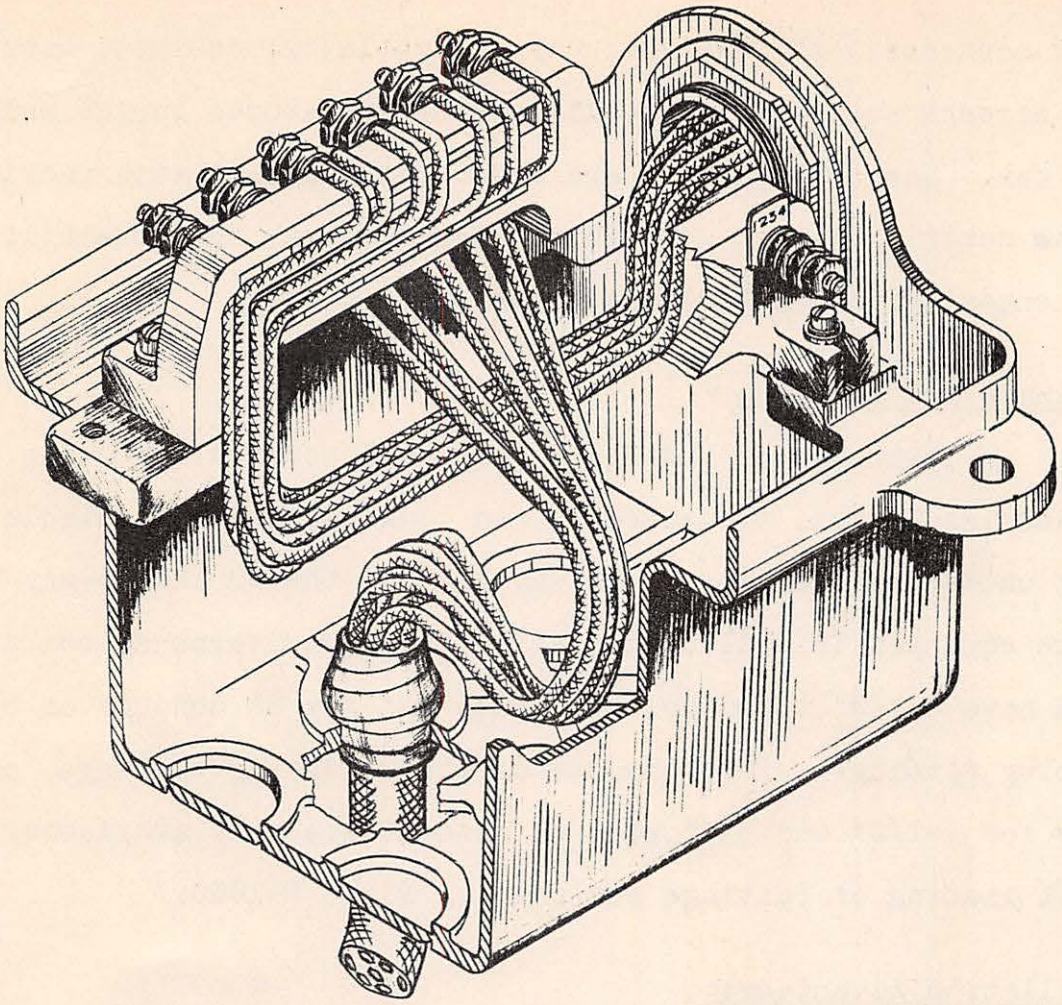
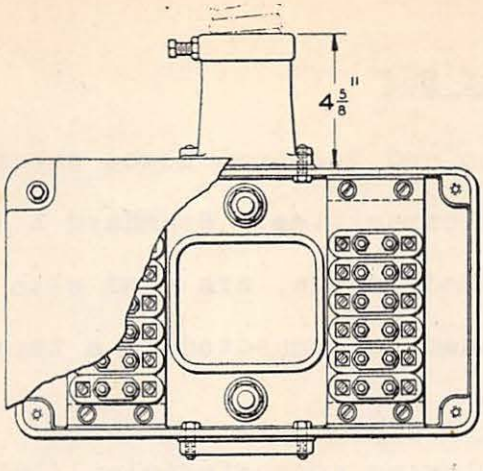


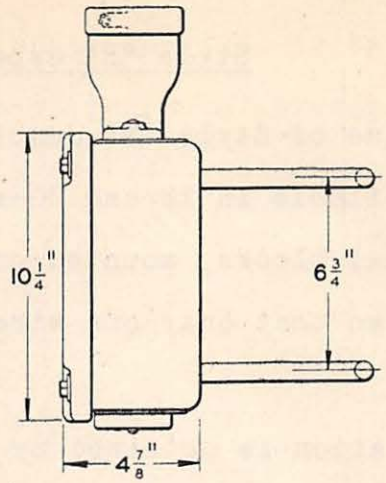
Fig. 2

run into an open side channel in the foundations. No sharp bends need be made in the cables.

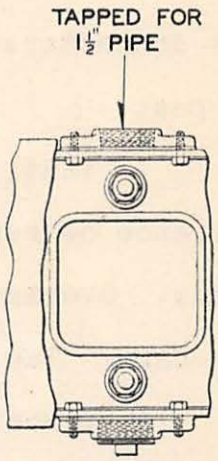
Figure 2, showing a sectional view of a Style W-44-way box, is used to illustrate a recommended manner of wiring. Wires can be run from beneath or over the top of the terminal boards. Nomenclature tags may be affixed to terminal posts or directly to wires. Terminal nuts are accessible for application of socket wrenches. Two wires can be applied to each post with resultant increase in terminal capacity. Vertical disposal of terminals affords small chance for occurance of grounds and crosses.



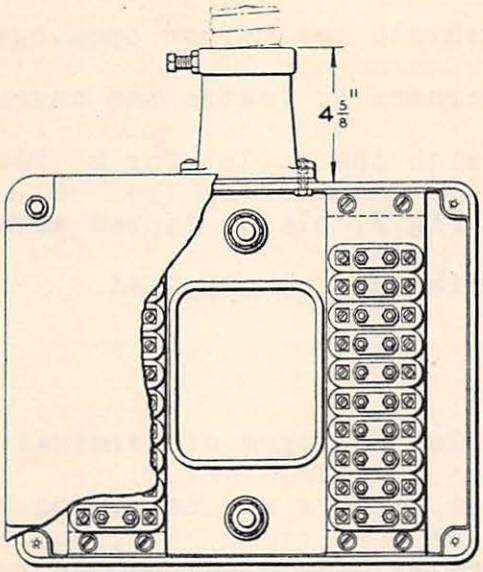
12-WAY BOX



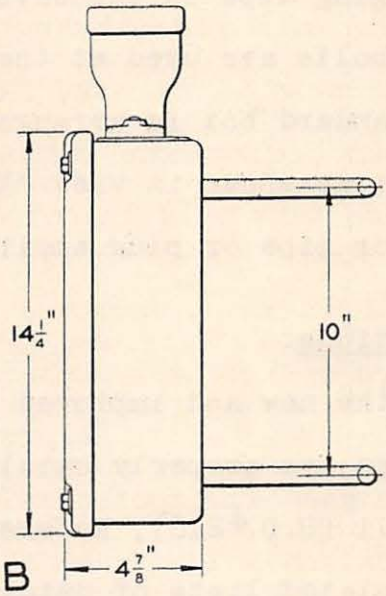
A



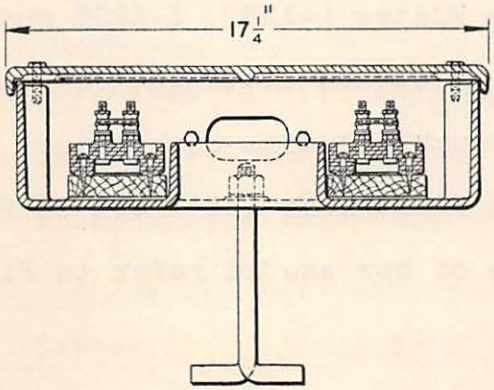
VIEW "X"



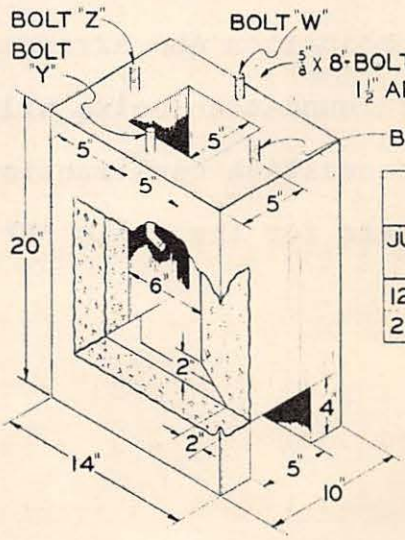
20-WAY BOX



B



SECTIONAL END VIEW OF 12 & 20 WAY JUNCTION BOXES



FOUNDATION LAYOUT	
JUNCTION BOX	BOLTS USED
12-WAY	"W" & "Y"
20-WAY	"X" & "Z"

Fig. 3.....Style "N" Junction and Terminal Boxes.

Style "N" type of Box

The line of Style "N" Junction and Terminal Boxes shown in Fig.3 are available in 12 and 20-way capacities. Standard A.A.R. porcelain terminal blocks, mounted on wood boards, are used with link connectors so that only one wire need be connected to a terminal post.

Ventilation is obtained by allowing approximately 1/16" clearance between the cover and main castings, except at the corner bosses. Overhanging lips on the cover shield the narrow openings from rain. Tap bolts are used at the corners to fasten the cover.

The standard box is arranged with one outlet for 2" flexible conduit; but as shown in view "X", Fig.3, plates tapped with 1-1/2" threads for pipe or plug application may be supplied.

Ordering Instructions:

Until the new and improved Style "W" types of terminal and junction boxes are properly cataloged, orders may be placed by referring to Fig.1 (U.D.#215), References A, B or C and to the references in the tabulated lists of catalog Plates L-1250, L-1255 and L-1275 for combination and arrangement of outlet fittings. The proper number of foundation bolts will be supplied with each order. Recommended foundation construction and dimensions are shown in Fig.1.

Orders for the Style "N" type of box should refer to Fig.3, U.D. #215.

H.H. Copeland 9/10/35